EXCURSION TO CHELTENHAM.

THE first outing on the new annual list of excursions of the Field Naturalists' Club took place on Saturday, 19th August, the place chosen being Cheltenham, a township about twelve miles south of Melbourne, on the Mordialloc and Frankston railway. The day was fairly fine, but windy. The first to put in an appearance at Prince's Bridge station was the leader, Mr. C. French, sen., who was shortly after joined by Mr. Best. The platform, owing to a race meeting at Caulfield, was densely crowded with people, and as we could not detect any of our members in the crowd, we were afraid that the threatening weather had prevented them from turning up. We (Mr. Best and myself), however, resolved to go on and do a little hunting on our own account, but on arrival at Cheltenham were very pleased to see a goodly muster of members—fourteen in number, including our president and four ladies. The route chosen was through the local cemetery, and in this secluded and pretty spot we found many specimens of the new and singular coccids, *Cylindiroccus casuarinæ* and *Lecanium Frenchii*, these having been found by myself for the first time, and described by Mr. Maskell, of New Zealand. Steering our course westward over the sandy hills, we came across the pretty little plants *Hovea heterophylla* and *Euphrasia Brownii*, both of which in the early days were very common in these parts, but are now becoming somewhat scarce. Arriving at the "Old Springs" our "pond life" people set to work with a will. (A brief account of what they did on the occasion has kindly been forwarded to me by Mr. Shephard, and is appended to this report.) The so-called "Old Springs" was once a charming little spot, the banks being thickly clothed with small plants of that elegant fern *Gleichenia circinata*, commonly known as the Coral Fern. The place is now changed, and the once clear hole of water has been fenced, a pump erected, without (it appeared to us) a due regard for the health and welfare of the good people of Cheltenham, whose supply of water is mostly derived from this source. In 1853–4 this water was beautifully clear and wholesome; but, now that the fence is broken down, dogs and other domestic animals can bathe in this spring with impunity. Pushing on towards Sandringham we pass several well-known spots, reminding one, at least, of the party of pleasant times in the early fifties. The lovely Epacris, together with Styphelia, Sprengelia, &c., were at their best. The strong perfume from *Acacia suaveolens* was noticeable in many places where we passed through. Larvæ seemed scarce, but several were taken, and on the stem of a common "bog-shrub," *Viminaria denudata*, a fine male specimen of the beautiful moth *Danima banksia* was found clinging. This is, I think, an unusual place to find the perfect insect, although the larvæ are common enough on small plants of *Banksia*

australis, or dwarf scrub Honeysuckle. Of boring larvæ we found many, and these were brought home by the Masters Hill for rearing purposes. The so-called "New Springs" are about half a mile west of the "Old Springs," and were first opened out for cattle in 1855. In these springs there are many aquatic plants, as :—Chara, Myriophyllum, Ottelia, besides many species of Confervæ, &c. Beetles were scarce, and very few species were found, and of Lepidoptera six or seven kinds were collected, together with larvæ of Entometa, Metura, Clenia, &c., &c.—about ten (10) species in all. As the afternoon was short, and some of the party having to catch the train back to Melbourne, we faced towards the station, and on our way flushed the Little Grass Bird, with a nest of three eggs, the latter being brought home for the collection. Mr. Hart having elected to walk to Brighton, found, as we afterwards learned, a Copperhead Snake. Orchids were scarce, it being too early for most kinds. Plants in flower were fairly numerous, and in this connection it may be interesting to learn that at Sandringham a wild flower show was being held, but our time was too short to permit of our party honouring the show with their patronage. Melbourne was reached about dark, and all agreed that a pleasant and fairly profitable afternoon had been spent. It is very gratifying to be able to report such a good attendance of members, which it is hoped will continue to be the case during the season, as field work was one of the principal objects for which our club was started.

Mr. J. Shephard remarks that "two members were drawn by Mr. French's promise to conduct them to the 'Springs,' and found them quite an ideal place for their purpose. The first one visited is used as a local water supply, and is in the form of a circular bricked tank. Through the interstices in the brickwork Myriophyllum and other water plants projected into the water, and on them were subsequently found Rotifers of the genera Limnias and Eocistes. As is often the case in deep, permanent water, free swimming forms were not numerous. The next spring is in a natural condition, and is a charming little pool, with clear water, and filled with a luxuriant growth of Conferva and the higher aquatic plants. The overflow at this season forms a large, shallow pool, and in this Volvox was at once seen. Later examination of the material did not yield a lengthy list, as at the outset a puzzling Rotifer of the genius Anuræa was met with. This genus is composed of small loricate species, and there are quite a number of Australian forms which do not agree with any published descriptions. The one in question has a shield-shaped lorica, prolonged in front into six spines and posteriorly into one central spine. The lorica possesses characteristics intermediate between the British form *Anurœa cochlearis* and *A. stipitata* (Ehrenberg), but there is a central prominence on the corona not shown in the

figure of *A. cochlearis*. The only figure of *A. stipitata* available was of the lorica only, which agreed in general outline and number of spines, but differed in the arrangement of the tesselated markings. Among other life noted were a number of very young forms of Lepidurus. It was felt that these springs would well repay the trouble of an occasional visit at different seasons of the year, and the members present were indebted to Mr. C. French for his thoughtfulness in including these pools in his route, and also for his interesting explanation of the scale insects and other plant parasites met with on the way."—C. French, F.L.S.

ON A SPECIES OF ISARIA.

By H. T. Tisdall, F.L.S.

(Read before the Field Naturalists' Club of Victoria, 10th July, 1893.)

We are all aware that animals for the most part prey on the vegetable world, and on its destruction and subsequent absorption animals live and thrive; but it is not so well known that some species of the vegetable world return the compliment.

A number of fungi are entirely dependent for existence on the nourishment which they obtain from the animal creation. Amongst these parasites those that prey on various kinds of insects are not the least curious.

The three best known groups of these plants are Entomophthoreæ, Laboulbeniaceæ, and Cordyceps. The Entomophthoreæ form a species of innate absorption moulds—they absorb and replace the internal organs of the insect, and only appear on the surface when they have killed their hosts. These fungi are very minute. The most common and familiar example will be found on the dead flies on the window pane. White bundles may be observed exuding from different parts of the body of the fly; these are, in the first instance, produced from a cylindrical germ cell, which continuously grows in an apical direction, finally developing into a branched body of cylindrical thread-like form, termed a hypha. These hyphæ, when first developed in the insect, are of different sizes and shapes, constantly increasing in number by budding until the body of the insect is almost completely filled by them. If the insect be now exposed during moist weather, long threads are produced from the hyphal bodies; these protrude through the joints of the insect, and either appear as simple white hairs or become fruitful, the tips of the branches swelling and producing gonidia. When the swollen ends are quite mature the mother cell is ruptured, and the conidium or spore is forcibly ejected to a considerable distance. The hyphæ have accomplished their work of destruction before they appear on the surface of the fly. Mr. Gray gives the following graphic description:—"All these